

REMARKS

This application has been carefully reviewed in light of the final Office Action dated July 9, 2010. Claims 1 to 7 are in the application, of which Claim 1 is independent. Reconsideration and further examination are respectfully requested.

Claims 1 to 7 were rejected under 35 U.S.C. § 103 over Japan 2002-341598 (Matsunaga) in view of U.S. Publication No. 2003/0039909 (Sawada) and considered with Japan 06-118700 (Tsuyama). Claim 4 was rejected under 35 U.S.C. §103(a) over Matsunaga in view of Sawada and considered with Tsuyama, in further view of U.S. Patent No. 4,789,613 (Ohtani). These rejections are respectfully traversed.

Claim 1 recites, *inter alia*, a dielectric loss tangent ($\tan\delta$) of the toner at 100 kHz satisfies the following formula (1): $(\tan\delta_H - \tan\delta_L)\tan\delta_L \leq 0.20$, wherein $\tan\delta_H$ represents a dielectric loss tangent of the toner at a glass transition temperature ($^{\circ}\text{C}$) + 10 $^{\circ}\text{C}$ and $\tan\delta_L$ represents a dielectric loss tangent of the toner at the glass transition temperature ($^{\circ}\text{C}$) - 10 $^{\circ}\text{C}$.

By virtue of the foregoing feature, it is possible to control the dispersed state of a magnetic body in a magnetic toner. At a frequency lower than 100 kHz, the influence of the glass transition temperature of a binder resin can increase. As a result, a rate of change in dielectric loss tangent around the glass temperature can be so large that it becomes difficult to determine the dispersed state of the magnetic body. On the other hand, at a frequency higher than 100 kHz, a rate of change in dielectric loss tangent can be so small that it becomes difficult to confirm the influence of the dispersibility of the magnetic body.

The Office Action concedes that Matsunaga does not disclose the foregoing feature. Yet, placing reliance on Tsuyama, the Office Action asserts that the claimed subject matter would nevertheless have been obvious. Applicants respectfully disagree.

The Office Action asserts that Tsuyama, at paragraph [0006], teaches that measurements are performed at frequencies of 1 to 100 kHz. See page 8, lines 6 to 8, of Office Action. However, Applicants respectfully submit that Tsuyama actually discloses that measurement of $\tan\delta$ was performed at a frequency of about 1 to 100 Hz. See last sentence of paragraph [0006] of Tsuyama. That is, the upper limit of $\tan\delta$ in Tsuyama is “100 Hz”, not “100 KHz”. Further, in Tsuyama’s Examples, $\tan\delta$ is measured at a frequency of 10^1 Hz. See paragraph [0029] of Tsuyama.

The Office Action states that the teaching of Tsuyama is at odds with Applicants’ assertion that the bilaterally symmetry about the glass transition temperature is typically not observed for magnetic toners, and requests Applicants to provide evidence to support this argument. See page 9, lines 5 to 8, of the Office Action.

In response, Applicants respectfully submit that there is insufficient information in Tsuyama to prepare a magnetic toner. Therefore, it is difficult to provide evidence showing that a magnetic toner prepared based on Tsusyama does not achieve the attendant benefits of the claimed subject matter.

However, even assuming that a magnetic toner is prepared based on Tsuyama, Applicants respectfully submit that such toner would not achieve at least the attendant benefit of controlling a dispersed state of a magnetic body in the toner.

For example, in one embodiment of the instant claims, a magnetic toner is prepared under the following conditions: (1) adjusting a kneading temperature to be equal to or higher than the softening point of the binder resin at the time of hot melt kneading (see paragraph [0024] of the application); (2) incorporating a relatively large amount (30 mass % or more, for example) of a low-molecular-weight component having a molecular weight of 10,000 or less in

the binder resin (see paragraph [0052] of the application); and (3) using a binder resin having a low particle size (a number average particle size of 300 µm or less, for example) in the step of mixing raw materials (see, paragraph [0053] of the application).

With respect to condition (1), in the Examples of Tsuyama, the binder resin is kneaded at 140°C. However, Tsuyama is not seen to concretely disclose a softening point of the binder resin. Thus, it is respectfully submitted that a relationship between kneading temperature and the softening point of the binder resin is not clear.

In this regard, however, it might be presumed that the softening point of the binder resin is close to 140°C. As such, it is difficult to sufficiently control the dispersed state of the magnetic body, even if the kneading temperature is equal to or higher than the softening point of the binder resin.

With respect to condition (2), in the Examples of Tsuyama, a resin having a weight-average molecular weight of 147,000 (Example 1) or 120,000 (Example 2) is used as a binder resin. See paragraphs [0028] and [0029] of Tsuyama. Tsuyama is not seen to concretely disclose a condition for polymerizing the binder resin, and therefore, it is difficult to identify a molecular weight distribution of the binder resin. However, considering the above-mentioned weight-average molecular weight of the binder resin, it might be assumed that the Tsuyama's binder resin contains a very small amount of a low-molecular-weight component having a molecular weight of 10,000 or less.

With respect to condition (3), Tsuyama is not seen to concretely disclose a particle size of the binder resin, and therefore, it is difficult to identify a particle size distribution of the binder resin. However, considering that a resin having a common particle size is used in

Tsuyama, the binder resin of Tsuyama is seen to be larger (several millimeters, for example) than the binder resin used in the Example of the subject application.

Of course, Claim 1 is not limited to the embodiment discussed above, or any other embodiment described in the application.

In view of the foregoing, Applicants respectfully submit that Tsuyama does not obtain a magnetic toner satisfying the claimed formula (1), nor a magnetic toner in which the dispersed state of the magnetic body is appropriately controlled. Applicants respectfully submit that a magnetic toner based on a preparation method of Tsuyama, assuming that such could be prepared, would tend to magnetically aggregate, and the magnetic aggregation would occur at a temperature of 10°C higher than the glass transition point. Accordingly, it is respectfully submitted that the value of $\tan\delta_H$ would be large, and as a result, the value defined in formula (1) would be greater than 0.20.

Sawada and Ohtani have been reviewed, and are not seen to remedy the foregoing deficiencies of Tsuyama.

The dependent claims are also submitted to be patentable because they set forth additional aspects and are dependent from the independent claim discussed above. Therefore, separate and individual consideration of each dependent claim is respectfully requested.

The application is believed to be in condition for allowance, and such action is courteously solicited.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office by telephone at (714) 540-8700. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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